Ethylene Oxide Burns

STERILIZATION of surgical dressings, gowns, anesthesia and inhalation equipment, and other medical supplies using ethylene oxide gas has become the favored method in many hospitals in recent years. Ethylene oxide is a colorless, gaseous, simple epoxy compound capable of producing severe burns in patients and hospital personnel. The scald-like lesions resemble bullous impetigo and toxic epidermal necrolysis (Lyell's disease).

After sterilization by this method, articles must be aerated thoroughly to insure that all residues of gas are eliminated. Polyvinyl or rubber materials should not be used within seven days following sterilization if stored at room temperature.

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Preemployment Radiography of the Spine

FOR YEARS both physicians serving industry and orthopedists providing consultative service to employers have debated the worth of preemployment radiography of the spine. Of particular concern has been the so-called "congenital anomaly" as the causative bête noire of back injury.

The literature on this subject falls into three broad categories. One includes articles that report only the incidence of abnormal x-ray findings noted on standard examinations with no relationship to clinical back symptoms or injury. Such information does nothing to establish a basis for the use of preemployment spine x-ray studies. A second includes reports that proclaim a reduction in the incidence and severity of back injuries following the institution of preemployment radiography of the spine to exclude persons with defects presumed to be significant. While such writings cannot be ignored, they do use a different comparative time period—many not fully taking into account increased safety efforts and the effect of greater attention given back complaints as a result of their programs. A third category is made up of articles in which the spine x-ray studies of persons with back symptoms are compared with studies of persons without back complaints. If spine x-ray studies do have predictive value, one would expect an increased incidence of abnormalities discoverable on x-ray films among those persons with complaint of back difficulty. Analysis of such studies showed that most investigators failed to find significant differences in the number of abnormal lesions. The conclusion of the author, after reviewing 56 publications, was that the use of preemployment x-ray studies of the back has been based primarily on the hypothesis that developmental abnormalities predispose to an increased incidence of lumbar back injury. Evidence would show that this hypothesis has not been substantiated.

No mention has been made of the findings by interested radiologists that many of the heretofore termed congenital anomalies were, in fact, posttraumatic in nature, being found after stress fractures. Further, no discussion was devoted to the matter of the intensity or depth of ionizing radiation required for a variety of views of the lumbosacral spine, including usually anterior-posterior, lateral and two oblique exposures. The upsurge of malpractice accusations, in addition to the arguments offered above, should end the use of preemployment spine radiography as part of a pre-hiring examination by either in-plant physicians or private practitioners who examine for industry.

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Alcoholism and Workers

PRACTITIONERS who help industry comply with federal and state laws and regulations in occupational safety and health may be faced with an employer who cannot resolve the job performance problems of several capable, but frequently absent, employees who are chronic alcoholics. The consultant may recommend to the company that an alcoholism rehabilitation program be established consisting of three parts: (1) the publication of a policy regarding the employer's recognition of alcoholism as an illness and his support of a program devoted to conserving work-contributing problem drinkers; (2) the ori-

entation of the first-line supervisor so that he can effect his role in recognition, confrontation and referral and (3) the presence of a medical and counseling capability within the organization to bring about extramural referral and treatment along with supportive counseling during the period of newly attained sobriety.

Labor, management, the federal government, the Armed Services and other major groups have established policies and have created mechanisms for the identification and treatment of alcoholic employees so that the 9,000,000 alcoholics in the United States can be retained in, or returned to, gainful employment. Concerned practitioners working in occupational medicine or acting as consultants to commercial or manufacturing organizations can aid an employer in rehabilitating potentially productive workers whose illness now costs American industry more than $12 billion a year.

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Effect of Noise: Psychosomatic Reactions to Acoustic Shocks

NOISE is defined as any unwanted sound. Prolonged exposure to noise eventually can produce measurable hearing loss. Noise also may produce physiologic changes: dilation of the pupils, increased pulse amplitude and rate, impairment of sleep, annoyance reactions, startle reactions and manifestations such as nausea, headache, irritability, instability, anxiety and loss of appetite.

Very loud noise of short duration is called impulsive noise and is exemplified by the sound of gunfire. This type of noise is more likely to result in a severe startle reaction, especially if not anticipated, and may result in more than the usually measurable physiologic body responses.

A case in point involves a middle-aged telephone operator who was startled by a loud noise when she plugged into a telephone line. There was an immediate outcry, and a prompt loss of consciousness. Upon arousal she had pain and tinnitus in the ear, nausea, vomiting, diaphoresis and severe anxiety. This person never returned to her job. She developed a profound fear of telephone equipment (conversion hysteria?) and required continuing (lifelong) psychiatric care.

Acoustic shocks in the telephone industry may occur in flurries. One operator at a bank of switchboards may be a victim of impulsive noise on the line and the person's outburst often results in similar responses in co-workers soon after. In some instances these employees must be transferred to other work because they become extremely apprehensive and report acoustic shocks frequently and in rapid succession, although the equipment is found to be in excellent working order.

Noise is of considerable concern to the Occupational Safety and Health Administration and its counterparts on the state level, as it is to the United States Environmental Protection Agency and the community at large.

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Degreaser's Flush

TRICHLORETHYLENE (TCE) is one of the most widely-used industrial solvents, serving as an effective degreasing agent for metal parts in addition to other uses. Recent observations of persons repeatedly exposed to TCE vapor showed the sudden occurrence of a blotchy, red eruption a few minutes following the ingestion of moderate amounts of enthanol. The vasodilatation of small blood vessels involves bilateral and fairly symmetrical areas of the face, neck, chest and back, and occasionally also the extremities. The erythema, while embarrassing to the worker, is not accompanied by unusual subjective responses. Blood pressure, pulse and findings on electrocardiogram, complete blood count, urinalysis and SMA-12 panel are within normal limits. The condition usually subsides in a few hours.

This response to TCE vapor has not been recognized before, and has eluded satisfactory explanation. While apparently quite harmless, degreaser's flush requires further study.

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